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L17 and arabitol	5

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*DB=USPT,PGPB,EPAB,DWPI; PLUR=YES; OP=OR*

<u>L18</u>	L17 and arabitol	5	<u>L18</u>
<u>L17</u>	L15 and arabinose	78	<u>L17</u>
<u>L16</u>	L15 and (arabinose or arabitol)	85	<u>L16</u>
<u>L15</u>	L13 same hydrogenat\$4	771	<u>L15</u>
<u>L14</u>	L13 and hydrogenat\$4	1786	<u>L14</u>
<u>L13</u>	"sugar alcohol"	7757	<u>L13</u>
<u>L12</u>	L11 and hydrogenat\$4	9	<u>L12</u>
<u>L11</u>	pentitol same pentose	38	<u>L11</u>
<u>L10</u>	pentitol and pentose	76	<u>L10</u>
<u>L9</u>	pentinol same pentose	0	<u>L9</u>
<u>L8</u>	l1 and hydorgenat\$4	0	<u>L8</u>
<u>L7</u>	L5 and hydrogenat\$4	5	<u>L7</u>
<u>L6</u>	L5 same hydrogenat\$4	0	<u>L6</u>
<u>L5</u>	L3 same l1	43	<u>L5</u>
<u>L4</u>	L3 and l1	57	<u>L4</u>
<u>L3</u>	L-arabitol	99	<u>L3</u>

*DB=USPT,PGPB; PLUR=YES; OP=OR*

<u>L2</u>	L-arabinose	1865	<u>L2</u>
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*DB=USPT,PGPB,EPAB,DWPI; PLUR=YES; OP=OR*

<u>L1</u>	L-arabinose	2043	<u>L1</u>
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END OF SEARCH HISTORY

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=> s L-arabinose
    1194748 L
    16621 ARABINOSE
    66 ARABINOSES
    16636 ARABINOSE
        (ARABINOSE OR ARABINOSES)
L1      4157 L-ARABINOSE
        (L(W)ARABINOSE)

=> s L-arabitol
    1194748 L
    1145 ARABITOL
    5 ARABITOLS
    1148 ARABITOL
        (ARABITOL OR ARABITOLS)
L2      183 L-ARABITOL
        (L(W)ARABITOL)

=> s 11 and 12
L3      73 L1 AND L2

=> s 13 and hydrogenation
    146229 HYDROGENATION
    1859 HYDROGENATIONS
    146494 HYDROGENATION
        (HYDROGENATION OR HYDROGENATIONS)
L4      4 L3 AND HYDROGENATION

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=> d 14 1-4 kwic

L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS

TI Process for conversion of oxidized sugars into hydrogenated sugars via catalytic **hydrogenation**

AB Catalytic **hydrogenation** of oxidized sugars into hydrogenated sugars in presence of Lewis acid, is reported. Thus, ruthenium-catalyzed **hydrogenation** of arabonic acid in presence of 2-anthraquinone sulfonic acid gave arabitol in good yield. L'erythrose, au threose, au sorbose, au xylose, a l'**arabinose**, au ribose, au ribulose, au xylulose, au glucose, au galactose, au fructose, au mannose, au maltose ou au lactose. Erythritol, le threitol, le ribitol, le xylitol, l'**arabitol**, mannitol, le sorbitol, l'iditol, le maltitol, le lactitol.

ST aldonic acid **hydrogenation** ruthenium alditol prepn; alditol prepn **hydrogenation** catalytic oxidized monosaccharide; arabonic acid **hydrogenation** ruthenium catalyzed arabitol prepn

IT Carbohydrates, reactions

RL: RCT (Reactant)

(aldonic acids; conversion of oxidized sugars into hydrogenated alditols via catalytic **hydrogenation**)

IT **Hydrogenation**

**Hydrogenation** catalysts

(conversion of oxidized sugars into hydrogenated alditols via catalytic **hydrogenation**)

IT Alditols

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(conversion of oxidized sugars into hydrogenated alditols via catalytic **hydrogenation**)

IT Monosaccharides

RL: RCT (Reactant)

(conversion of oxidized sugars into hydrogenated alditols via catalytic **hydrogenation**)

IT 7439-88-5, Iridium, uses 7440-15-5, Rhenium, uses 7440-18-8, Ruthenium, uses

RL: CAT (Catalyst use); USES (Uses)

(conversion of oxidized sugars into hydrogenated alditols via catalytic **hydrogenation**)

IT 50-70-4P, D-Glucitol, preparation 69-65-8P, Mannitol 87-99-0P, Xylitol 149-32-6P, Erythritol 488-81-3P, Ribitol 585-86-4P, Lactitol 585-88-6P, Maltitol 2152-56-9P, Arabitol 7493-90-5P, Threitol 24557-79-7P, Iditol

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(conversion of oxidized sugars into hydrogenated alditols via catalytic **hydrogenation**)

IT 84-48-0, 2-Anthraquinone sulfonic acid 13752-83-5, Arabonic acid

RL: RCT (Reactant)

(conversion of oxidized sugars into hydrogenated alditols via catalytic **hydrogenation**)

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS

AB . . . by extn. with CHCl<sub>3</sub> of the unaltered resistant derivs. Products thus obtained in pure cryst. form include: di-O-isopropylidene D-mannose, D-xylose, L-**arabinose**, and D-galactose. Catalytic **hydrogenation** of these products yielded sirupy di-O-isopropylidene D-mannitol, which was converted by acid hydrolysis to cryst. D-mannitol, and cryst. xylitol, L-**arabitol**, and dulcitol.

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AB . . . into the corresponding 2-O-glycosylglycerol, the structure of which was then established. All oxidations were carried out in AcOH with Pb(OAc)<sub>4</sub>; **hydrogenations** with NaBH<sub>4</sub>. Unless otherwise stated

[.alpha.]D27 of substituted hexitols and pentitols were taken in H2O; those of the benzoates were. . . taken by the KBr window technique, and were often used for purposes of identification; no actual absorption data are included. 3-O-.beta.-L-arabopyranosyl-**L-arabinose** (718 mg.) from larch arabogalactan was oxidized, treated with 10% (CO2H)2, filtered, and the evapd. filtrate dissolved in H2O and. . . 2-O-.beta.-L-arabopyranosylglycerol, m. 154-5.degree., [.alpha.] 204.degree. (c 1.2); pentabenzoate, m. 48-50.degree., [.alpha.] 164.degree. (c 0.8). Treated similarly, with but slight modifications, 3-O-.alpha.-D-xylopyranosyl-**L-arabinose** (452 mg.), obtained from the autohydrolyzate of golden apple gum, gave 338 mg. 2-O-.alpha.-D-xylopyranosyl-L-erythritol, sirup, [.alpha.] 91.degree. (c 1.5); hexabenzoate,. . . [.alpha.] -37.degree. (c 1.1), and the pentabenzoate, m. 51-3.degree., [.alpha.] -36.degree. (c 0.9). Partial hydrolysis of corn cob hemicellulose B gave 2-O-.beta.-D-xylopyranosyl-**L-arabinose** (II) from which was obtained, by direct reduction with NaBH4, 2-O-.beta.-D-xylopyranosyl-**L-arabitol**, m. 185-7.degree. (from MeOH-EtOH), [.alpha.] -33.degree. (c 1.2), which by oxidation followed by reduction gave 2-O-.beta.-D-xylopyranosylglycerol, [.alpha.] -30.degree. (c 1.3); pentabenzoate, m. 51-3.degree., [.alpha.] -35.degree. (c 1.2). The partial hydrolysis of gum acacia gave 3-O-.alpha.-D-galactopyranosyl-**L-arabinose**, giving rise to 2-O-.alpha.-D-galactopyranosyl-L-erythritol, m. 156-8.degree., [.alpha.] 145.degree. (c 1.0), from which was formed 2-O-.alpha.-D-galactopyranosylglycerol, m. 131-2.degree. (from EtOH), [.alpha.] . . .

L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS  
 AB . . . on distn. in a high vacuum below 100.degree., probably on account of a small amt. of impurity acting catalytically. Catalytic **hydrogenation** of 5 g. **l-arabinose** in 40 cc. H2O in the presence of Raney Ni (from 3 g. Ni-Al alloy) for 40 hrs. with the use of 745 cc. H2 gave 4.5 g. of **l-arabitol**, m. 99-101.degree. (cor.). Degradation of benzal-**l-arabitol** with Pb (OAc)4 yielded cryst. benzal-**l-threose**, C11H12O4.0.5 H2O, m. 119-20.degree. (cor.) from benzene-Et2O. A mixt. of 4.0 g. II, 25. . .

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